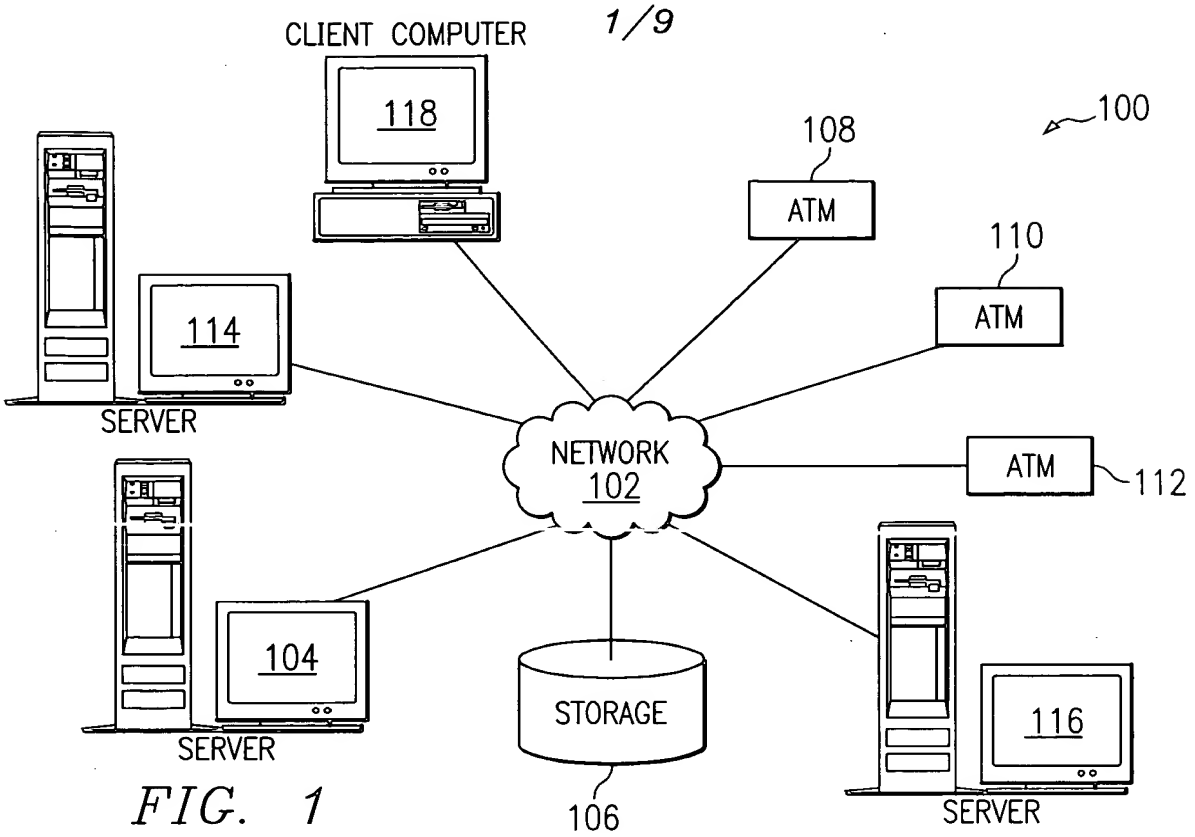

CLIENT COMPUTER
118
100
108
ATM
110
ATM
114
SERVER
NETWORK
102
ATM
112
104
SERVER
STORAGE
106
116
SERVER

FIG. 1

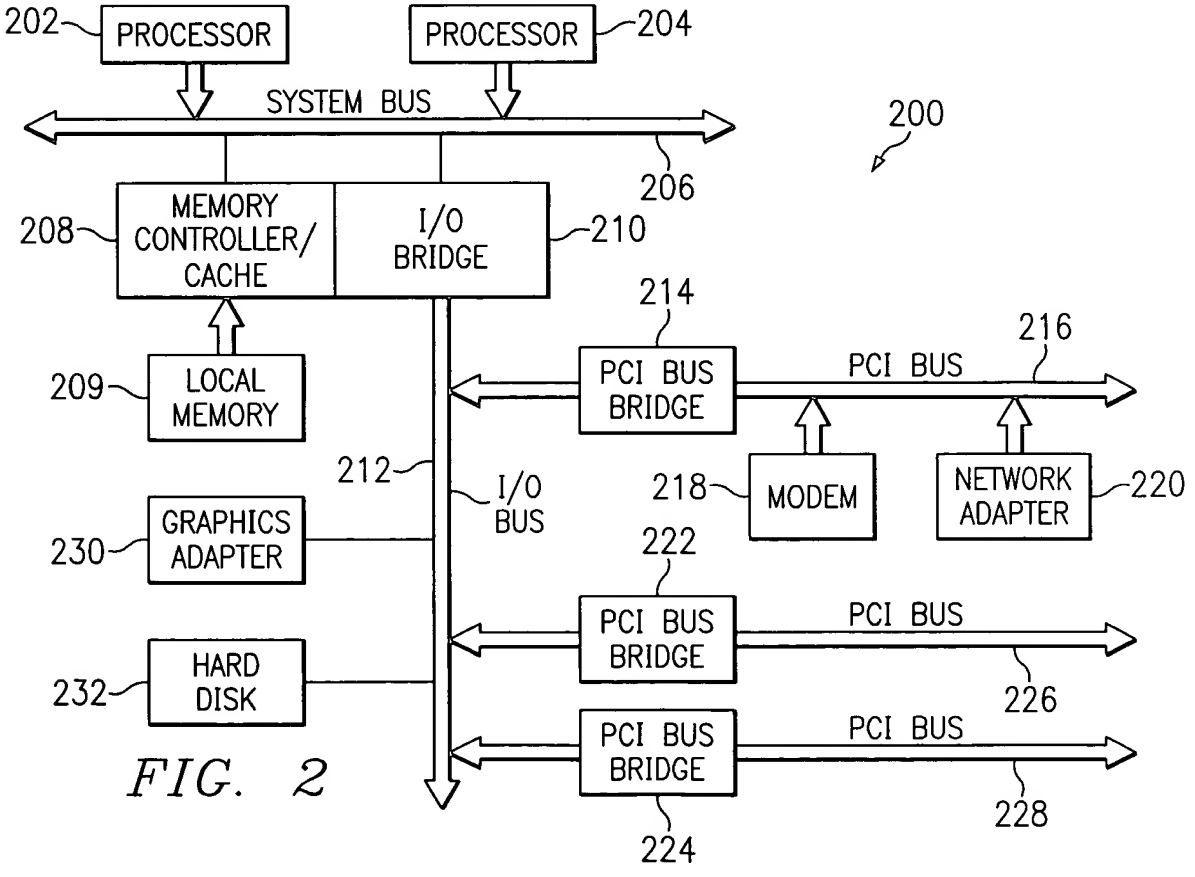
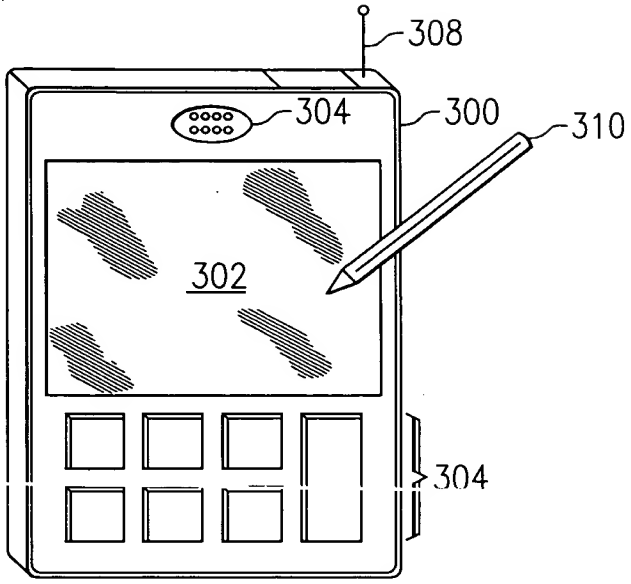

202
PROCESSOR
PROCESSOR
204
SYSTEM BUS
200
206
208
MEMORY CONTROLLER/ CACHE
I/O BRIDGE
210
214
216
209
LOCAL MEMORY
PCI BUS BRIDGE
PCI BUS
212
I/O BUS
218
MODEM
NETWORK ADAPTER
220
230
GRAPHICS ADAPTER
222
PCI BUS BRIDGE
PCI BUS
232
HARD DISK
226
PCI BUS BRIDGE
PCI BUS
228
224

FIG. 2

FIG. 3



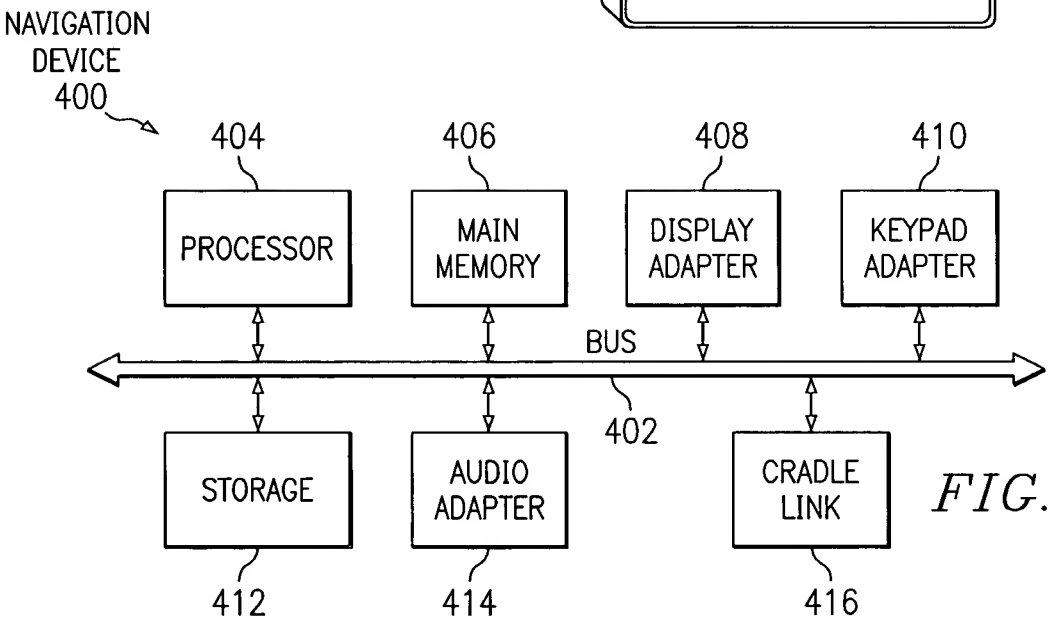


FIG. 4

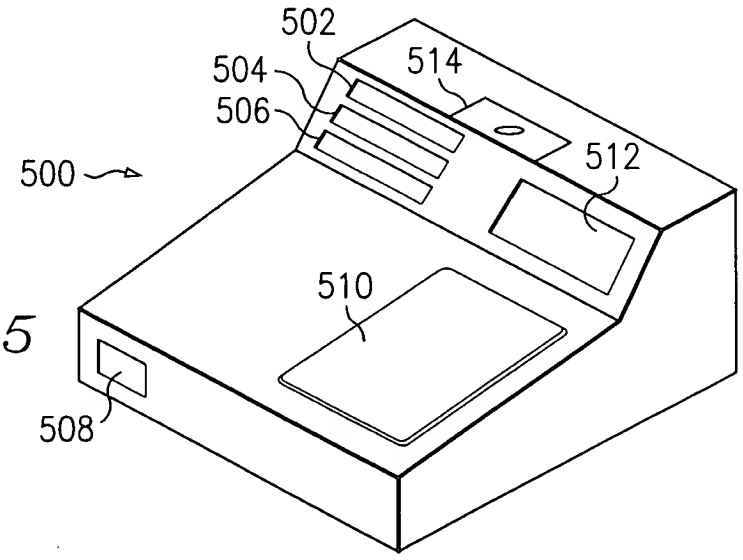


FIG. 5

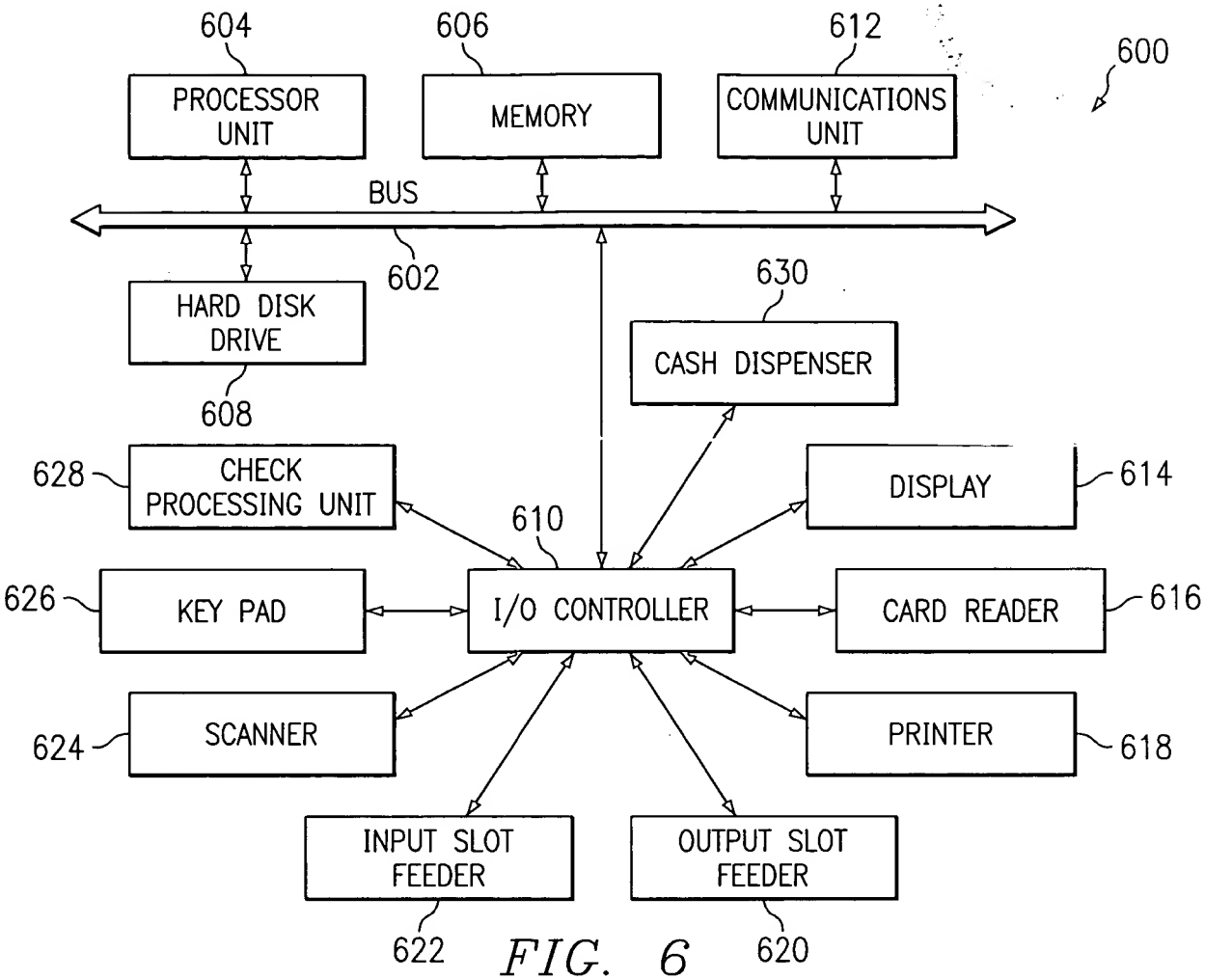

604
606
612
600
PROCESSOR UNIT
MEMORY
COMMUNICATIONS UNIT
BUS
602
HARD DISK DRIVE
608
630
CASH DISPENSER
628
CHECK PROCESSING UNIT
610
DISPLAY
614
626
KEY PAD
I/O CONTROLLER
CARD READER
616
624
SCANNER
PRINTER
618
INPUT SLOT FEEDER
OUTPUT SLOT FEEDER
622
620

FIG. 6

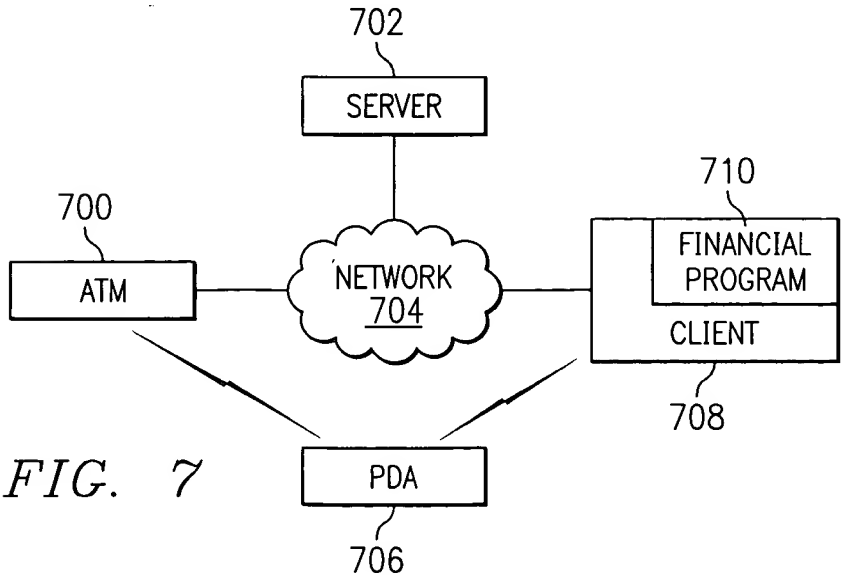

702
SERVER
710
700
FINANCIAL PROGRAM
ATM
NETWORK 704
CLIENT
708
PDA
706

FIG. 7

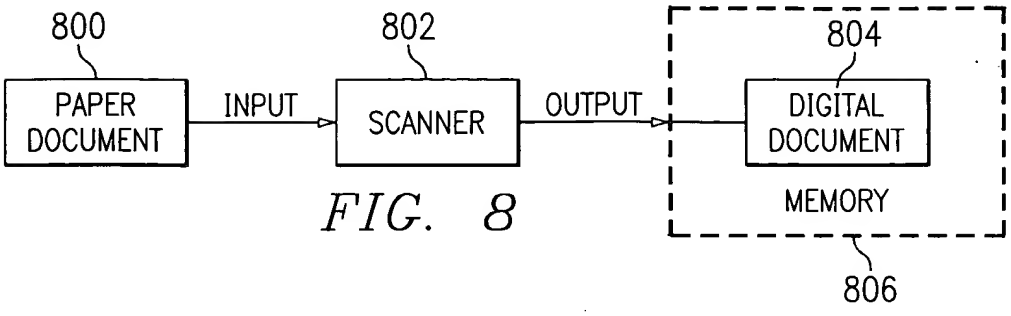


FIG. 8

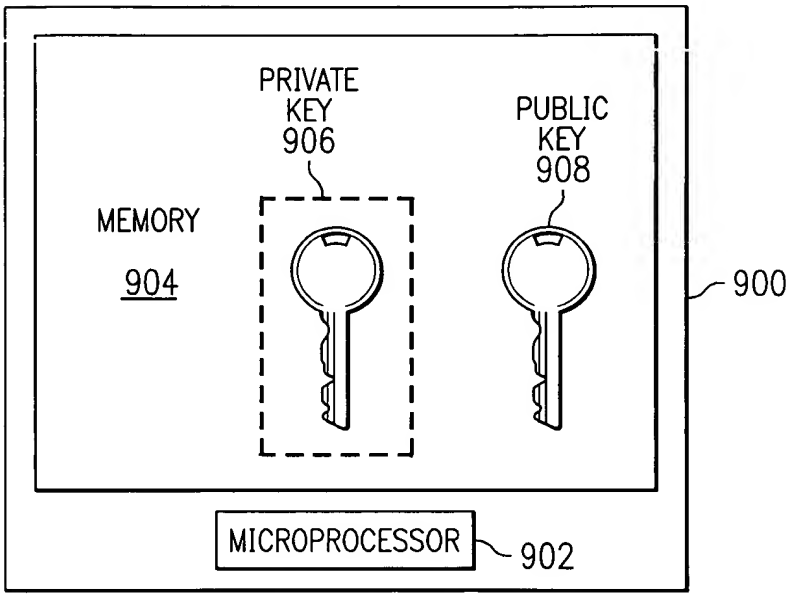


FIG. 9

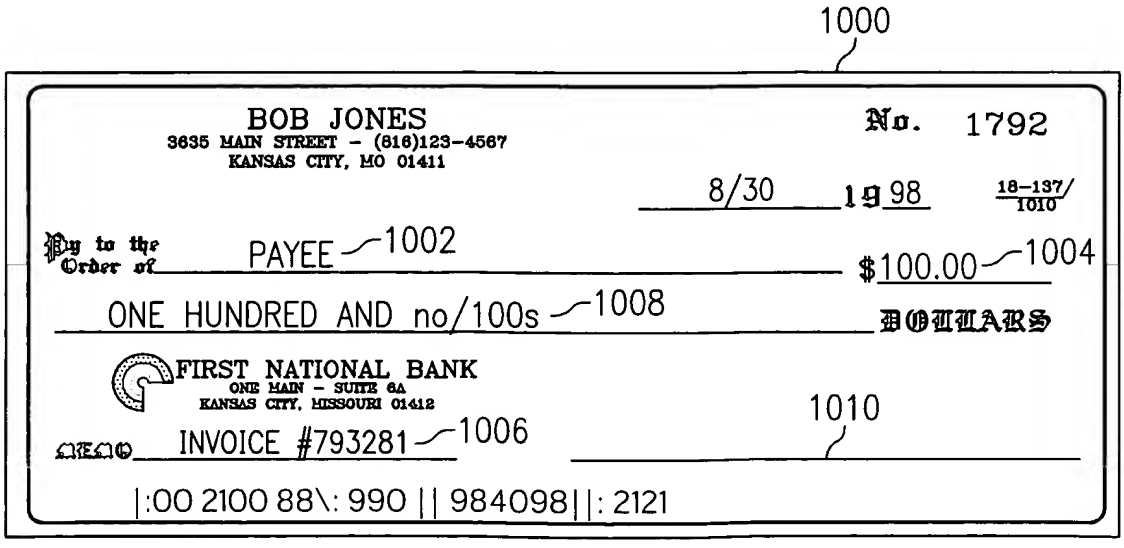


FIG. 10

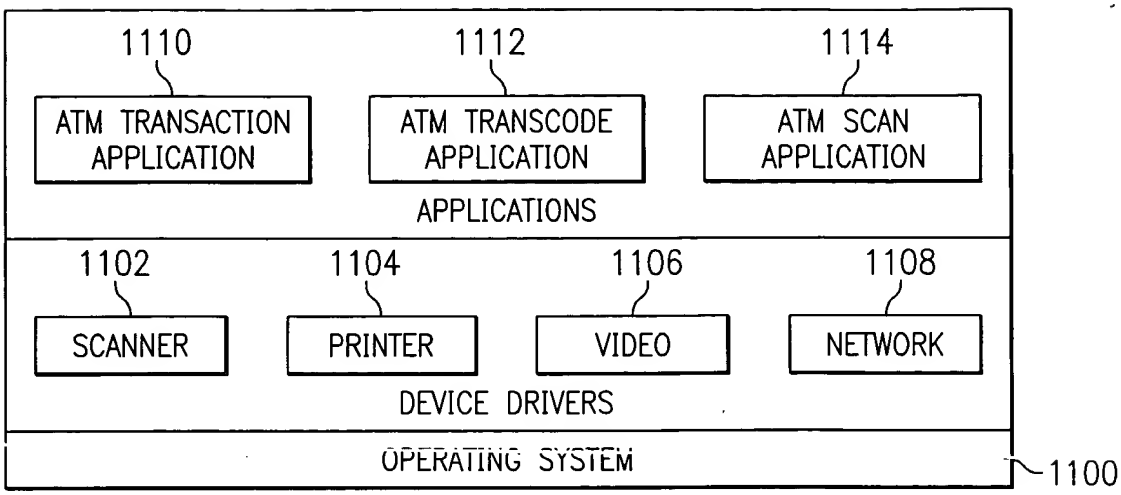


FIG. 11

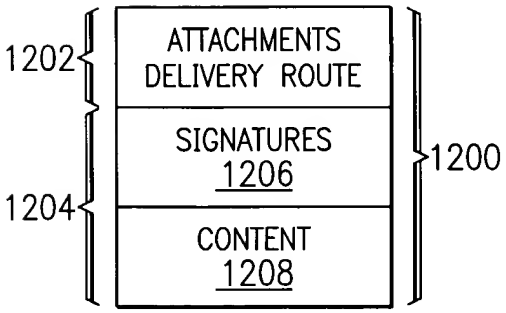


FIG. 12

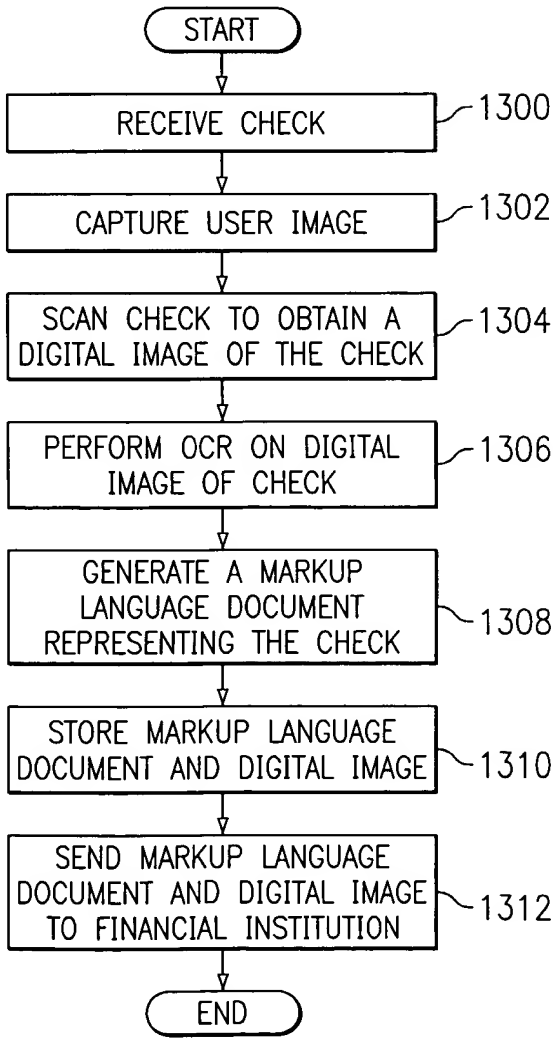


FIG. 13

FIG. 14

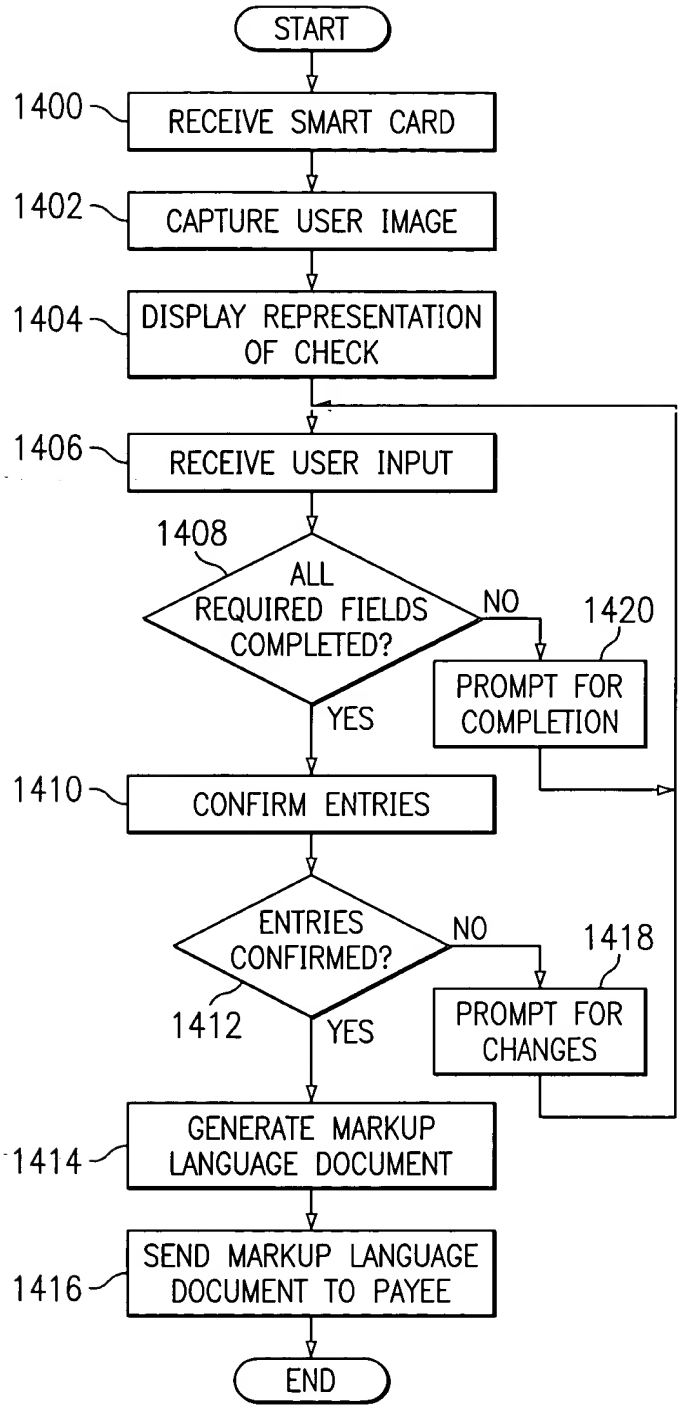

START
1400
RECEIVE SMART CARD
1402
CAPTURE USER IMAGE
1404
DISPLAY REPRESENTATION OF CHECK
1406
RECEIVE USER INPUT
1408
ALL REQUIRED FIELDS COMPLETED?
NO
1420
PROMPT FOR COMPLETION
YES
1410
CONFIRM ENTRIES
ENTRIES CONFIRMED?
NO
1418
PROMPT FOR CHANGES
1412
YES
1414
GENERATE MARKUP LANGUAGE DOCUMENT
1416
SEND MARKUP LANGUAGE DOCUMENT TO PAYEE
END

FIG. 15

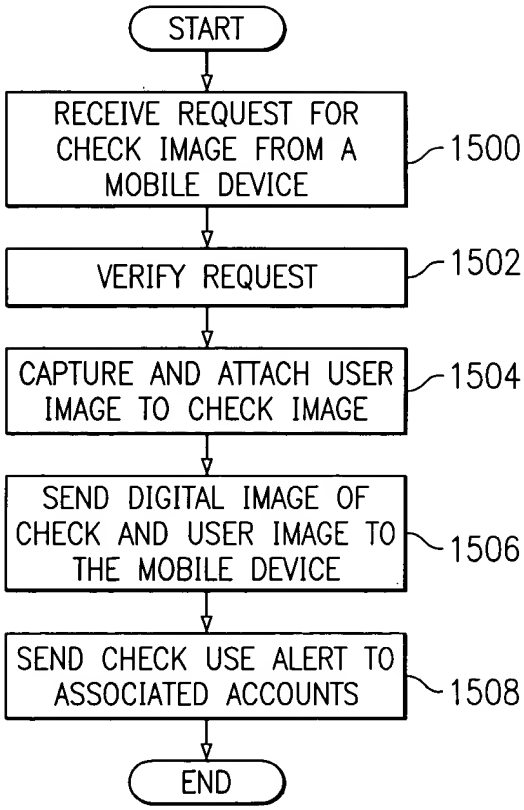

START
RECEIVE REQUEST FOR CHECK IMAGE FROM A MOBILE DEVICE
1500
VERIFY REQUEST
1502
CAPTURE AND ATTACH USER IMAGE TO CHECK IMAGE
1504
SEND DIGITAL IMAGE OF CHECK AND USER IMAGE TO THE MOBILE DEVICE
1506
SEND CHECK USE ALERT TO ASSOCIATED ACCOUNTS
1508
END

FIG. 16

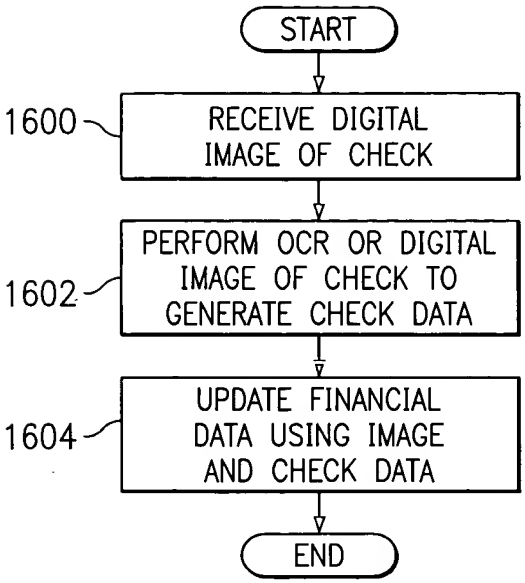

START
1600
RECEIVE DIGITAL IMAGE OF CHECK
1602
PERFORM OCR OR DIGITAL IMAGE OF CHECK TO GENERATE CHECK DATA
1604
UPDATE FINANCIAL DATA USING IMAGE AND CHECK DATA
END

FIG. 17

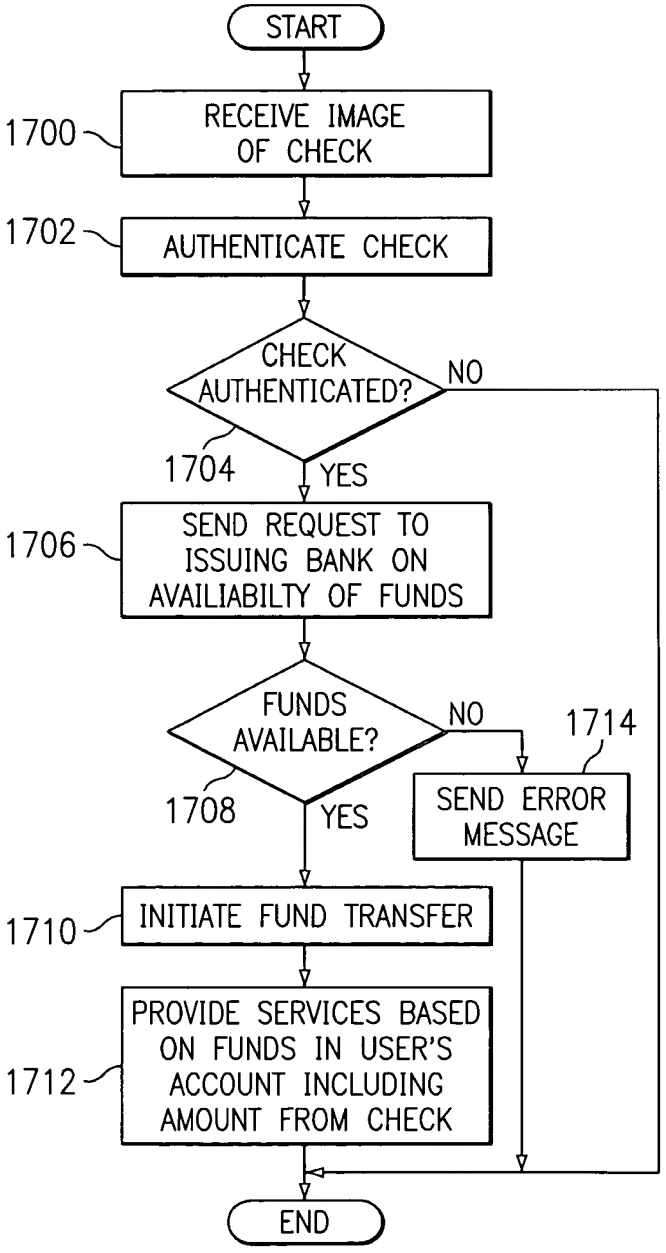

START
1700
RECEIVE IMAGE OF CHECK
1702
AUTHENTICATE CHECK
CHECK AUTHENTICATED?
NO
1704
YES
1706
SEND REQUEST TO ISSUING BANK ON AVAILIABILTY OF FUNDS
FUNDS AVAILABLE?
NO
1714
SEND ERROR MESSAGE
1708
YES
1710
INITIATE FUND TRANSFER
1712
PROVIDE SERVICES BASED ON FUNDS IN USER'S ACCOUNT INCLUDING AMOUNT FROM CHECK
END

FIG. 18

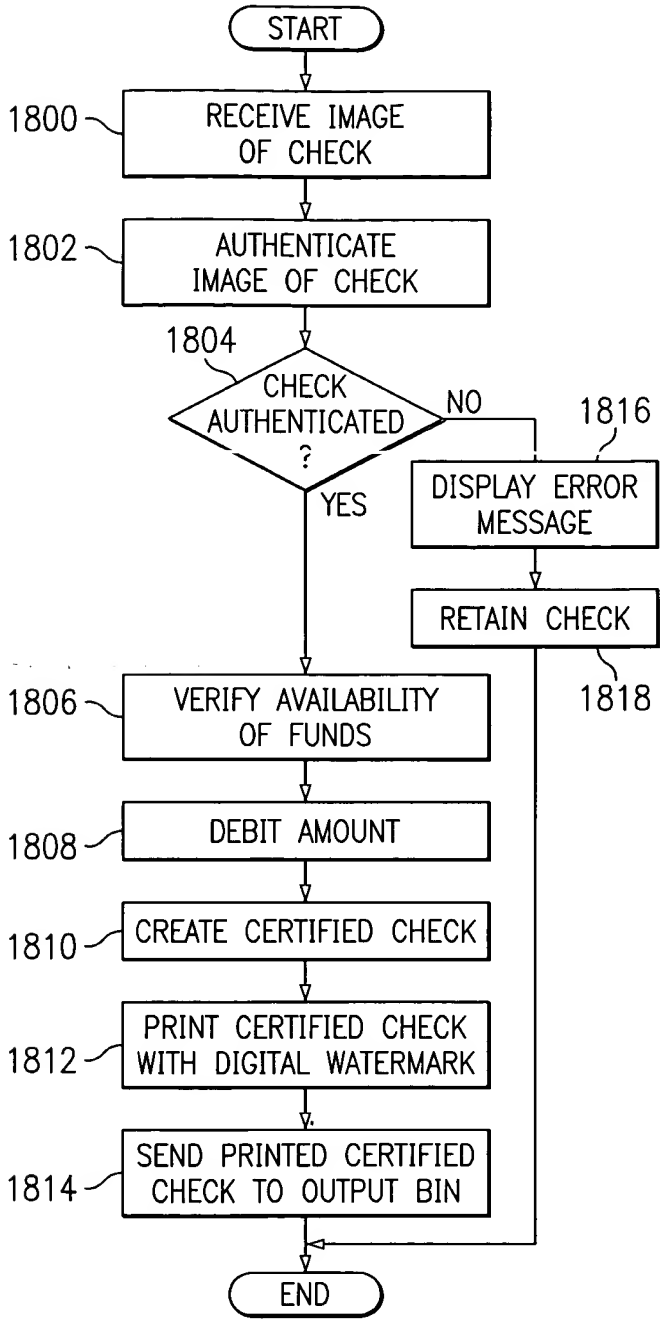
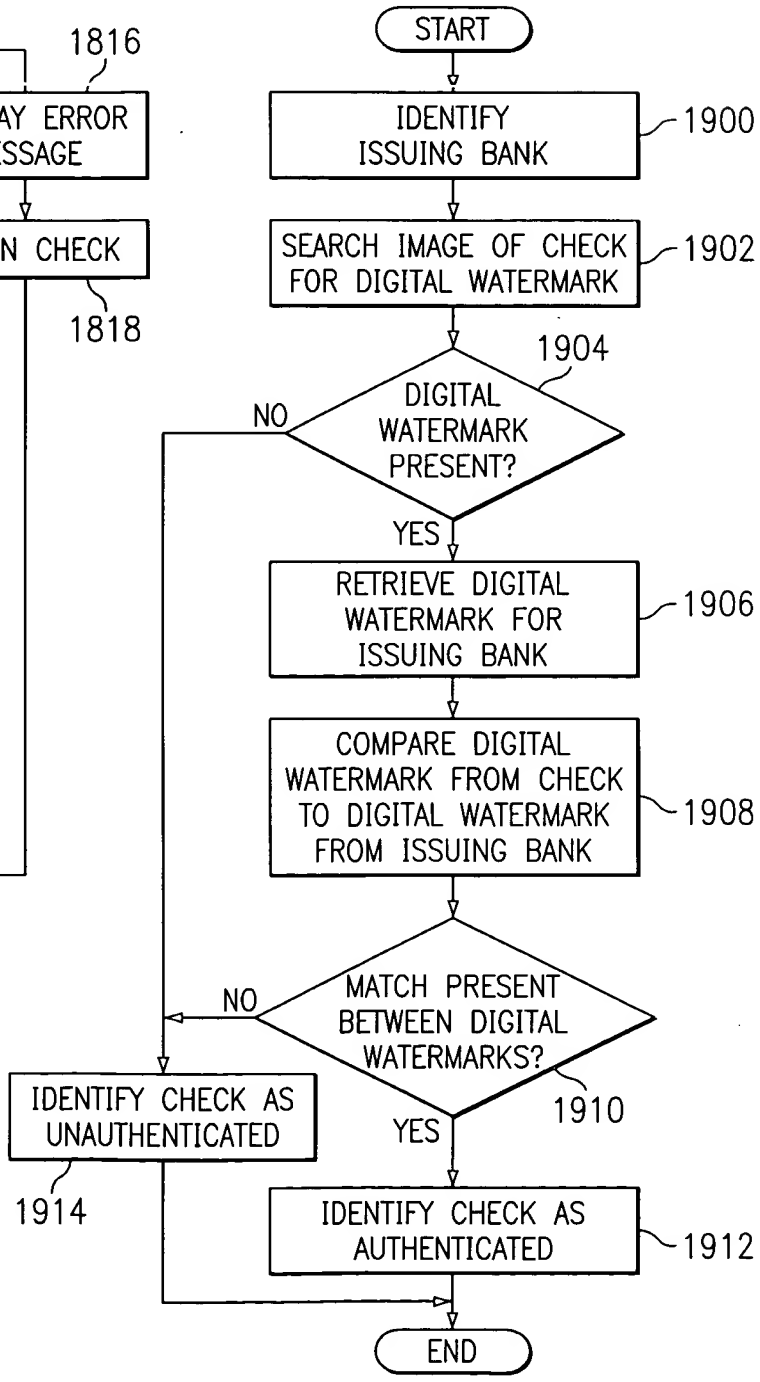

START
1800
RECEIVE IMAGE OF CHECK
1802
AUTHENTICATE IMAGE OF CHECK
1804
CHECK AUTHENTICATED ?
NO
YES
1816
DISPLAY ERROR MESSAGE
RETAIN CHECK
1818
1806
VERIFY AVAILABILITY OF FUNDS
1808
DEBIT AMOUNT
1810
CREATE CERTIFIED CHECK
1812
PRINT CERTIFIED CHECK WITH DIGITAL WATERMARK
1814
SEND PRINTED CERTIFIED CHECK TO OUTPUT BIN
END

FIG. 19


START
IDENTIFY ISSUING BANK
1900
SEARCH IMAGE OF CHECK FOR DIGITAL WATERMARK
1902
1904
DIGITAL WATERMARK PRESENT?
NO
YES
RETRIEVE DIGITAL WATERMARK FOR ISSUING BANK
1906
COMPARE DIGITAL WATERMARK FROM CHECK TO DIGITAL WATERMARK FROM ISSUING BANK
1908
MATCH PRESENT BETWEEN DIGITAL WATERMARKS?
NO
YES
1910
IDENTIFY CHECK AS UNAUTHENTICATED
1914
IDENTIFY CHECK AS AUTHENTICATED
1912
END

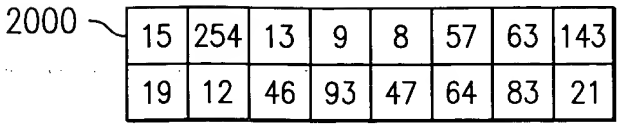


FIG. 20A

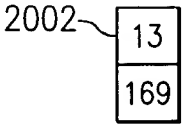


FIG. 20B

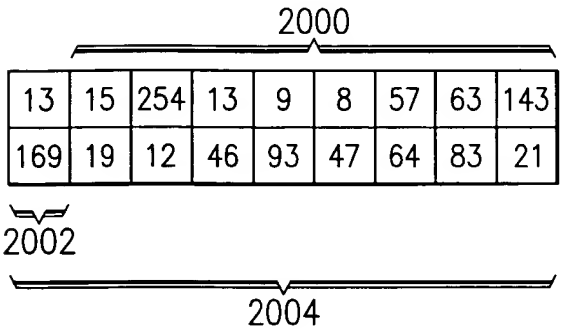


FIG. 20C

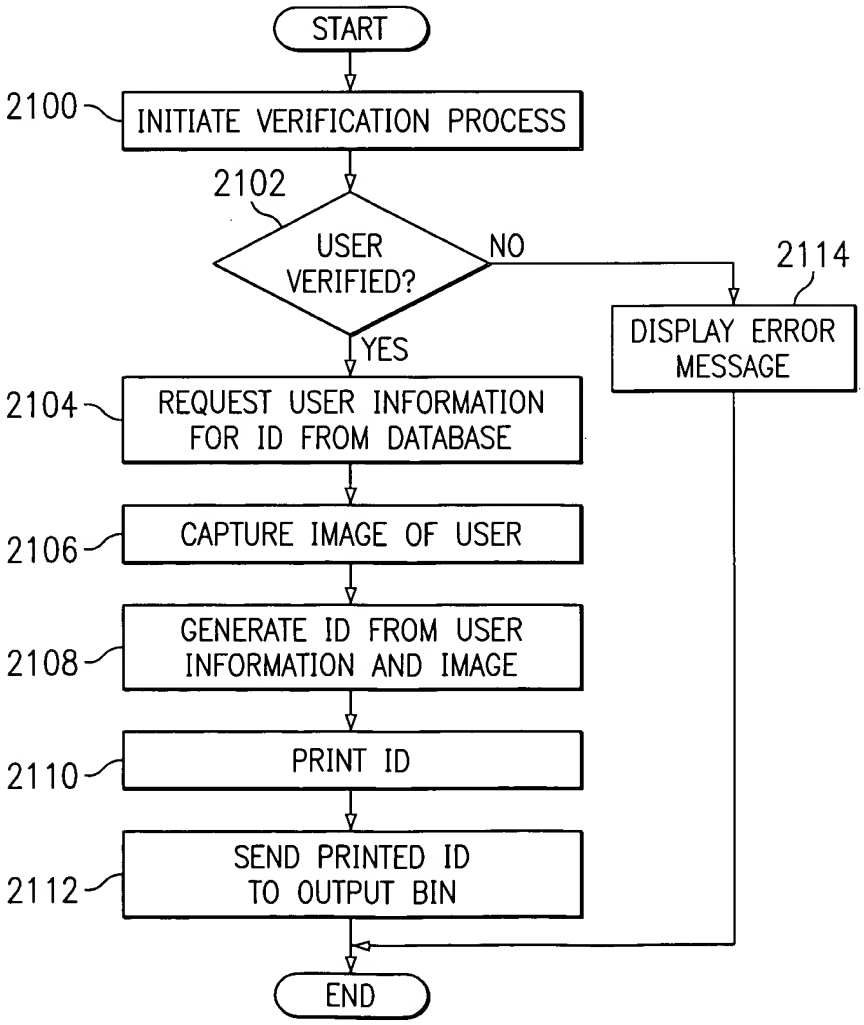



FIG. 21